

INTERNATIONAL SEARCH REPORT

International Application No

PCT/2005/001208

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01J3/46 G01J3/50 A61C19/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01J A61C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 654 794 A (O'BRIEN JOHN K) 31 March 1987 (1987-03-31) abstract; figure 1 column 1, lines 53-60 column 6, line 54 - column 7, line 12; claim 8	1-10, 21-31
X	US 2003/190578 A1 (LEHMANN MARYANN) 9 October 2003 (2003-10-09) abstract; figure 2 paragraphs [0011] - [0015] paragraphs [0018] - [0019] paragraphs [0036], [0045] ----- -/--	1-10, 21-31

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

11 March 2005

Date of mailing of the international search report

10.06.2005

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International Application No

PCT/JP2005/001208

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 798 839 A (BERNER MARKUS ET AL) 25 August 1998 (1998-08-25) abstract; figure 1 column 3, lines 5-35 column 5, lines 10-36 column 8, lines 41-57 -----	1-10, 21-31

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International application No.
PCT/EP2005/001208

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-10, 21-31

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-10, 21-31

A dental shade measuring device and the corresponding method comprising

illumination means for successively illuminating at least one part of a tooth with light of various spectral ranges
a monochrome sensor sensitive to intensity of light coming from said tooth part

means for converting the measurement signals into coordinates of a measurement point in a shade space in which reference points are defined, corresponding to the present shades of a dental shade guide

automatic shade search means for searching a shade corresponding to the reference point closest to the measurement point.

The technical problem to be solved by this group can be construed as how to free the evaluation of dental shade from the subjectivity part related to the practitioner.

2. claims: 11-20

A measuring instrument comprising a sensor and an illumination head provided with a plurality of light emitting sites linked to the light sources.

The technical problem to be solved by this group can be construed as how to obtain a compact measuring instrument which can be used for the teeth located in the back part of the mouth.

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4654794	A	31-03-1987	NONE	
US 2003190578	A1	09-10-2003	US 2002064751 A1	30-05-2002
			US 2002012895 A1	31-01-2002
			US 6305933 B1	23-10-2001
			US 6132210 A	17-10-2000
			US 5961324 A	05-10-1999
			US 5766006 A	16-06-1998
			US 6206691 B1	27-03-2001
			US 6210159 B1	03-04-2001
			AU 6171296 A	30-01-1997
			WO 9701308 A1	16-01-1997
US 5798839	A	25-08-1998	EP 0777113 A1	04-06-1997
			JP 9184763 A	15-07-1997